Lab 9
name:
Abhinav c
Usn: 1bm23cs008


```java
class Q {
    int n;
    boolean valueSet = false;

    synchronized int get() {
        while (!valueSet) {
            try {
                System.out.println("\nConsumer waiting\n");
                wait();
            } catch (InterruptedException e) {
                System.out.println("InterruptedException caught");
            }
        }
        System.out.println("Got: " + n);
        valueSet = false;
        System.out.println("\nIntimate Producer\n");
        notify();
        return n;
    }

    synchronized void put(int n) {
        while (valueSet) {
            try {
                System.out.println("\nProducer waiting\n");
                wait();
            } catch (InterruptedException e) {
                System.out.println("InterruptedException caught");
            }
        }
        this.n = n;
        valueSet = true;
        System.out.println("Put: " + n);
        System.out.println("\nIntimate Consumer\n");
        notify();
    }
}

class Producer implements Runnable {
```

```java
    Q q;

    Producer(Q q) {
        this.q = q;
        new Thread(this, "Producer").start();
    }

    public void run() {
        int i = 0;
        while (i < 15) {
            q.put(i++);
            try {
                Thread.sleep(500); // Sleep to simulate some work and give consumer time to process
            } catch (InterruptedException e) {
                System.out.println("Producer interrupted");
            }
        }
    }
}

class Consumer implements Runnable {
    Q q;

    Consumer(Q q) {
        this.q = q;
        new Thread(this, "Consumer").start();
    }

    public void run() {
        while (true) {
            q.get();
            try {
                Thread.sleep(1000); // Sleep to simulate some work and give producer time to
produce
            } catch (InterruptedException e) {
                System.out.println("Consumer interrupted");
            }
        }
    }
}

public class Main {  // This class should be public
    public static void main(String[] args) {
        System.out.println("Abhinav C\nUSN : 1BM23CS008");
```

```
        Q q = new Q();
        new Producer(q);
        new Consumer(q);
    }
}
```

```
Abhinav C
USN : 1BM23CS008
Put: 0

Intimate Consumer

Got: 0

Intimate Producer

Put: 1
```

```
Intimate Producer

Put: 2

Intimate Consumer


Producer waiting

Got: 2

Intimate Producer

Put: 3

Intimate Consumer


Producer waiting

Got: 3

Intimate Producer

Put: 4

Intimate Consumer


Producer waiting

Got: 4

Intimate Producer

Put: 5

Intimate Consumer


Producer waiting

Got: 5

Intimate Producer

Put: 6

Intimate Consumer


Producer waiting

Got: 6

Intimate Producer

Put: 7

Intimate Consumer
```

```
Intimate Consumer

Producer waiting

Got: 8

Intimate Producer

Put: 9

Intimate Consumer

Producer waiting

Got: 9

Intimate Producer

Put: 10

Intimate Consumer

Producer waiting

Got: 10

Intimate Producer

Put: 11

Intimate Consumer

Producer waiting

Got: 11

Intimate Producer

Put: 12

Intimate Consumer

Producer waiting

Got: 12

Intimate Producer

Put: 13

Intimate Consumer

Producer waiting
```

```
Producer waiting

Got: 12

Intimate Producer

Put: 13

Intimate Consumer

Producer waiting

Got: 13

Intimate Producer

Put: 14

Intimate Consumer

Got: 14

Intimate Producer

Consumer waiting
```